REMARKS

An Excess Claim Fee Payment Letter is submitted herewith to cover the cost of three excess total claims.

Claims 1-11 and 26-45 are all the claims presently pending in the application. Claims 7-11, 36 and 40 have been withdrawn. Claims 1, 7 and 37 have been amended to more particularly define the claimed invention. Claims 43-45 have been added.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 2, 4, 26, 33-35, 37-39, 41 and 42 stand rejected under 35 U. S. C. §102(b) as allegedly unpatentable over Lowery (U. S. Patent No. 5,959,316). Claims 3, 5 and 6 stand rejected under 35 U. S. C. §103(a) as allegedly unpatentable over Lowery in view of Roberts et al. (U. S. Patent No. 6,335,548).

Claims 27-32 stand rejected under 35 U. S. C. §103(a) as allegedly unpatentable over Lowery in view of Chen (U. S. Patent No. 6,531,328).

These rejections are respectfully traversed in view of the following discussion.

I. EXEMPLARY ASPECT OF THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g., as recited, for example, in claim 1) is directed to a light emitting apparatus, including a semiconductor light emitting element that is mounted on an electrode and emits light with a predetermined wavelength, a light-transmitting portion that includes a recess to house the semiconductor light emitting element, the light-transmitting portion comprising a light-transmitting material and being affixed to said electrode by a sealant formed on said light emitting element, and a phosphor layer portion that is formed on a surface of the recess, the phosphor layer portion including a phosphor to be excited by irradiating light emitted from the semiconductor light emitting element,

Importantly, the light-transmitting portion includes a convex portion and the electrode includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode (Application at Figure 5A; page 12, lines 19-25 and page 13, lines 24-26).

A conventional apparatus (e.g., see Application at Figure 4A) may include a light emitting diode (LED) 60 integrally formed with light source 62, and a lens element 72. However, since in such an apparatus the light source 62 and lens element 72 are positioned using posts 70, 71 and recesses 62A, 62B (Application at Figure 4B), it is difficult to adjust the positioning precision of the light source 62 and lens element 72. (Application at page 5, lines 1-5).

In the claimed invention, on the other hand, the light-transmitting portion includes a convex portion and the electrode includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode (Application at Figure 5A; page 12, lines 19-25 and page 13, lines 24-26). This may help to precisely position the light emitting element with respect to the phosphor layer portion that is formed on the surface of the recess (Application at page 15, lines 4-11).

II. THE ALLEGED PRIOR ART REFERENCES

A. Lowery

The Examiner alleges that Lowery teaches the invention of claims 1, 2, 4, 26, 33-35, 37-39, 41 and 42. Applicant would submit, however, that there are features of the claimed invention that are not taught or suggested by Lowery.

Lowery discloses a device including an LED 18, a transparent spacer 50 deposited on the LED 18 and cured (Lowery at col. 3, lines 7-9), a fluorescent material 52 deposited on the spacer 50 and cured, and the "entire assembly is embedded in a transparent encapsulation epoxy resin 26 (Lowery at Figure 1).

However, Applicant would submit that Lowery does not teach or suggest "*wherein said light-transmitting portion comprises a convex portion and said electrode comprises a concave portion which engages with said convex portion to allow the light-*

transmitting portion to be positioned on the electrode", as recited in claim 1 (Application at Figure 5A; page 12, lines 19-25 and page 13, lines 24-26). As noted above, in an exemplary aspect of the claimed invention, this feature may help to precisely position the light emitting element with respect to the phosphor layer portion that is formed on the surface of the recess (Application at page 15, lines 4-11).

Clearly, this feature is not taught or suggested by Lowery.

Indeed, first, Applicant would point out that the Examiner is attempting to equate the transparent encapsulation layer 68 in Lowery with the light-transmitting portion of the claimed invention. This is completely unreasonable.

In fact, Lowery teaches that the encapsulation layer 68 is simply deposited on the layer of fluorescent material 66 (Lowery at col. 2, lines 40-46). Moreover, Figures 1-3 clearly illustrate that the encapsulation layer 68 is simply intended to "encapsulate" the LED 60. That is, nowhere does Lowery teach or suggest that the encapsulation layer 68 may include the light-transmitting portion of the claimed invention (e.g., a light-transmitting portion which includes a convex portion and the electrode includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode).

Moreover, on page 4 of the Office Action, the Examiner presumably attempts to equate the encapsulation epoxy resin 26 with the light-transmitting portion of the claimed invention (Applicant suspects that the Examiner's reference to the arrows 28 was intended to be a reference to the resin 26). Again, this is completely unreasonable.

In fact, as illustrated in Figure 1, the LED 18 is formed in a "recessed reflector area 16". Further, the encapsulation resin 26 encapsulates the lead frames 12 and 14, recessed reflector area 16, and completely surrounds the LED 18. That is, nowhere does Lowery teach or suggest that the encapsulation resin 26 includes a "recess" (e.g., a small concavity), and certainly nowhere does Lowery teach or suggest that the resin 26 includes a recess for housing the LED 18.

Second, even assuming (arguendo) that the encapsulation layer 68 or the encapsulation resin 26 may somehow be confused with a light-transmitting portion, Applicant would point out that nowhere does Lowery teach or suggest that the LED 18

is mounted on an electrode and that the encapsulation layer 68/encapsulation resin 26 are "*affixed to said electrode by a sealant formed on said light emitting element*", as in the claimed invention. Instead, Lowery simply teaches that the LED 18 is formed in the recessed reflector area 16 (e.g., substrate 62).

Indeed, the Examiner surprisingly asserts that Lowery teaches the "electrode" of the claimed invention "(where wires connect to 62)". However, as noted above, the feature identified as "62" in Lowery is simply a substrate 62. Nowhere does Lowery teach or suggest that the substrate 62 may include an "electrode". In fact, the Examiner simply made this up.

Moreover, even assuming (arguendo) that the substrate 62 of Lowery may somehow be confused with an electrode, nowhere does Lowery teach or suggest that the encapsulation layer 68/encapsulation resin 26 is affixed to the substrate 62 by a sealant formed on a light emitting element. Indeed, the Examiner attempts to equate the transparent spacer 64 with the sealant of the claimed invention. This is clearly unreasonable.

In fact, Applicant would again refer the Examiner to Figure 4 in Lowery, and point out that the transparent spacer 64 is deposited as a liquid over the LED 18 and cured, and then the fluorescent material 66 is formed on the cured spacer 64, then the encapsulation layer 68 is deposited as a liquid onto the cured fluorescent material 66 (Lowery at col. 3, lines 18-33).

That is, clearly the cured spacer 64 in Lowery has nothing to do with fixing the encapsulation layer 68/encapsulation resin 26 to the substrate 62. Therefore, Lowery clearly does not teach or suggest light-transmitting portion which includes a convex portion and an electrode which includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode

Therefore, Applicant would submit that there are features of the claimed invention that are not taught or suggested by Lowery. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. Roberts and Chen

The Examiner alleges that Lowery would have been combined with Roberts to form the claimed invention of claims 3, 5 and 6, and with Chen to form the invention of claims 27-32. Applicant would submit, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every feature of the claimed invention.

Roberts is directed to a semiconductor radiator emitter package, in which a radiation emitter 202 (e.g., LED chip) is mounted on lead frame 201 (Roberts at col. 26, lines 18-29).

Chen discloses a packaging substrate including a packaging material 8, an LED chip 3 and an encapsulating resin 5 (Chen at Figure 14; col. 5, lines 1-45).

However, Applicant respectfully submits that these references are unrelated. Indeed, in contrast to Lowery, Roberts is directed to a radiation emitter package, and Chen is intended to improve performance by using a silicon wafer as a packaging substrate. No person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the references provide no motivation or suggestion to urge the combination as alleged by the Examiner. Indeed, these references clearly do not teach or suggest their combination. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, Applicant would submit that neither Lowery, nor Roberts, nor Chen, nor any alleged combination thereof teaches or "*wherein said light-transmitting portion comprises a convex portion and said electrode comprises a concave portion which engages with said convex portion to allow the light-transmitting portion to be positioned on the electrode*", as recited in claim 1 (Application at Figure 5A; page 12, lines 19-25 and page 13, lines 24-26). As noted above, in an exemplary aspect of the claimed invention, this feature may help to precisely position the light emitting element with respect to the phosphor layer portion that is formed on the surface of the recess

(Application at page 15, lines 4-11).

Clearly, Roberts does not teach or suggest this novel feature.

Indeed, the Examiner again attempts to rely on Figure 19 and columns 20 and 29-30 to support his position. However, Applicant would again point out that nowhere in these passages or anywhere else does Roberts teach or suggest a light-transmitting portion which includes a convex portion and an electrode which includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode. Instead, Roberts simply teaches an encapsulant that that is molded over leads and cured (e.g., see Roberts at Figure 11).

Therefore, Roberts clearly does not make up for the deficiencies of Lowery.

Likewise, this feature is clearly not taught or suggested by Chen. Indeed, the Examiner attempts to equate the LED chip 3 in Chen with the light emitting element of the claimed invention. Again, this is clearly unreasonable.

In fact, nowhere does Chen teach or suggest a lens for housing the LED chip 3, or a sealant that affixes a lens to an electrode. Therefore, Chen clearly does not teach or suggest a light-transmitting portion which includes a convex portion and an electrode which includes a concave portion which engages with the convex portion to allow the light-transmitting portion to be positioned on the electrode.

Therefore, like Roberts, Chen clearly does not make up for the deficiencies of Lowery.

Therefore, Applicant would submit that these references would not have been combined and even if combined, the combination would not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-11 and 26-45, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

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Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 4/10/08

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment was filed by facsimile with the United States Patent and Trademark Office, Examiner Andrew Owens Arena Group Art Unit # 2811 at fax number (571) 273-8300 this 10th day of April, 2008.

Phillip E. Miller
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